

10/707,847
Amdt. Dated May. 25, 2004
Reply to Office Action of May 21, 2004

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1 (Currently Amended). A putter comprising:

 a club head comprising

 a face portion having a recess with a face insert disposed therein;

 a sole portion extending rearward from the face portion, the sole portion having an internal surface and an external surface, the internal surface of the sole having a visible heel section and a visible ~~to~~ toe section,

 an aft mass portion rearward from the face portion a distance of between 2.5 inches to 4.5 inches,

 a crown portion extending rearward from the face portion, the crown portion having a central elongated section extending over the aft mass portion and a forward section having a width from a heel end of the face portion to a toe end of the face portion from between 3.0 inches to 5.0 inches, the forward section having a width greater than a width of the central elongated portion; and

 a shaft connected to the club head;

 wherein the putter has a swing static imbalance, S_y , greater than 500 grams-centimeter, the swing static imbalance defined as the product of the putter mass and the offset distance of the center of gravity of the club head behind the golfer's hands along the target direction.

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2 (Original). The putter according to claim 1 wherein the putter has a torsion swing inertia, I_{xz} , that has an absolute value greater than 10,000 grams-centimeter square, wherein the torsion swing inertia is defined as the product of inertia of the angular acceleration about the shaft axis and the angular acceleration about the swing axis.

3 (Original). The putter according to claim 1 wherein the putter has a center of gravity located at least 1.5 centimeters rearward from a shaft axis of the putter.

4 (Original). The putter according to claim 1 wherein the club head has at least 70 percent of its mass located in a center section.

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5 (Original). A putter comprising:

a club head comprising

a face portion,

a crown portion having a front section and a central elongated section extending rearward from the front section, the front section having a width from a heel end of the putter-type club head to a toe end of the putter-type club head ranging from 3.0 inches to 5.0 inches, the central elongated section having a width ranging from 1.0 inch to 3.0 inches, the front section having a width greater than a width of the central elongated section,

a sole portion extending rearward from the face portion,

an aft mass portion disposed at a rearward end of the sole portion,

and

wherein the putter-type club head has length from the face portion to a rearward most end of the aft mass portion ranging from 2.5 inches to 4.5 inches; and

a shaft connected to the club head;

wherein the putter has a torsion swing inertia, I_{xz} , that has an absolute value greater than 10,000 grams-centimeter square, wherein the torsion swing inertia is defined as the product of inertia of the angular acceleration about the shaft axis and the angular acceleration about the swing axis.

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6(Original). A putter comprising:

- a club head comprising
 - a face portion,
 - a crown portion having a front section and a central elongated section extending rearward from the front section, the front section having a width from a heel end of the putter-type club head to a toe end of the putter-type club head ranging from 3.0 inches to 5.0 inches, the central elongated section having a width ranging from 1.0 inch to 3.0 inches, the front section having a width greater than a width of the central elongated section,
 - a sole portion extending rearward from the face portion,
 - an aft mass portion disposed at a rearward end of the sole portion,
- and
- wherein the putter-type club head has length from the face portion to a rearward most end of the aft mass portion ranging from 2.5 inches to 4.5 inches; and
- a shaft connected to the club head;
- wherein the putter has a center of gravity located at least 1.5 centimeters rearward from a shaft axis of the putter.

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7 (Currently Amended). A putter comprising:

a club head comprising

a body having a face portion, a crown portion, a sole portion and an aft-mass portion, wherein the face portion, the crown portion, the sole portion and the aft-mass portion define a central aperture through the body having a heel end opening and a toe end opening, wherein the crown portion extends rearward from the face portion to over the aft-mass portion, wherein the sole portion extends from the face portion to the aft-mass portion, and wherein the central aperture separates the crown portion from the sole portion and the face portion from the aft-mass portion; and

a shaft connected to the club head;

wherein the club head has at least 70 percent of its mass located in a center section, and wherein the club head has a mass ranging from 275 grams to 400 grams.

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8 (Currently Amended). A putter comprising:

a club head comprising

a face portion having a recess with a face insert disposed therein,

a sole portion extending rearward from the face portion, the sole portion having an internal surface and an external surface, the internal surface of the sole having a visible heel section and a visible ~~to~~ toe section,

an aft mass portion rearward from the face portion a distance of between 2.5 inches to 4.5 inches,

a crown portion extending rearward from the face portion, the crown portion having a central elongated section extending over the aft mass portion and a forward section having a width from a heel end of the face portion to a toe end of the face portion from between 3.0 inches to 5.0 inches, the forward section having a width greater than a width of the central elongated portion, and

an alignment means disposed on an external surface of the crown portion;

a shaft connected to the club head; and

a grip attached to the shaft;

wherein the club head has at least 70 percent of its mass located in a center section, and wherein the club head has a mass ranging from 275 grams to 400 grams.

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9 (Currently Amended). A putter comprising:

a club head comprising

a face portion,

a crown portion having a front section and a central elongated section extending rearward from the front section, the front section having a width from a heel end of the putter-type club head to a toe end of the putter-type club head ranging from 3.0 inches to 5.0 inches, the central elongated section having a width ranging from 1.0 inch to 3.0 inches, the front section having a width greater than a width of the central elongated section,

a sole portion extending rearward from the face portion,

an aft mass portion disposed at a rearward end of the sole portion,

and

an alignment means disposed on an external surface of the crown portion,

wherein the putter-type club head has length from the face portion to a rearward most end of the aft mass portion ranging from 2.5 inches to 4.5 inches;

a shaft connected to the club head; and

a grip attached to the shaft;

wherein the club head has at least 70 percent of its mass located in a center section, and wherein the club head has a mass ranging from 275 grams to 400 grams.